

**IDAHO CONTENT STANDARDS
KINDERGARTEN
SCIENCE**

Standard 1: Nature of Science

Students explore the process of scientific investigation through observations and collection of data over time. Students follow instructions and work with others.

Goal 1.1: Understand Systems, Order, and Organization

No objectives at this grade level.

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.1.2.1 Make observations and collect data. [\(528.01.a\)](#)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.1.3.1 Measure in non-standard units. [\(528.02.b\)](#)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.1.4.1 Apply the concepts of yesterday, today, and tomorrow. [\(528.03.a\)](#)

Goal 1.5: Understand Concepts of Form and Function

No objectives at this grade level.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.1.6.1 Make observations. [\(529.01.a\)](#)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.1.7.1 Use cooperation and interaction skills. [\(538.01.a\)](#)

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.1.8.1 Follow instructions. [\(538.02.a\)](#)

Standard 2: Physical Science

Students use their senses to investigate the organizational patterns in the world around them and describe a variety of objects.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.2.1.1 Use senses to describe matter. (530.01.a)

Goal 2.2: Understand Concepts of Motion and Forces

No objectives at this grade level.

Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

Goal 2.4: Understand the Structure of Atoms

No objectives at this grade level.

Goal 2.5: Understand Chemical Reactions

No objectives at this grade level.

Standard 3: Biology

Students observe plants and animals and describe their characteristics.

Goal 3.1: Understand the Theory of Biological Evolution

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.3.1.1 Observe and describe the characteristics of plants and animals. (532.01.a)

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.3.2.1 Describe the difference between living and non-living things. (533.01.a)

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

Standard 4: Earth and Space Systems

Students make and describe observations of seasonal changes.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.4.1.1 Name the four seasons. [\(534.01.a\)](#)

K.S.4.1.2 Place the four seasons in order. [\(534.01.a\)](#)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

Standard 5: Personal and Social Perspectives; Technology

Students describe local environments

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Kindergarten, the student will be able to:

K.S.5.1.1 Describe characteristics of a man-made environment (home, school...).
[\(536.01.a\)](#)

Goal 5.2: Understand the Relationship between Science and Technology

No objectives at this grade level.

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives at this grade level.

**IDAHO CONTENT STANDARDS
GRADE 1
SCIENCE**

Standard 1: Nature of Science

Students explore the process of scientific investigation through observations and data collection, using standard and non-standard units of measurement. Students follow multi-step instructions and work with others.

Goal 1.1: Understand Systems, Order, and Organization

No objectives at this grade level.

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

Objective(s): By the end of Grade 1, the student will be able to:

1.S.1.2.1 Make observations, collect data, and use data. (543.01.a)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Grade 1, the student will be able to:

1.S.1.3.1 Measure in both standard and non-standard units. (543.02.b)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

Objective(s): By the end of Grade 1, the student will be able to:

1.S.1.4.1 Explain the concepts of past, present, and future. (543.03.a)

Goal 1.5: Understand Concepts of Form and Function

No objectives at this grade level.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Grade 1, the student will be able to:

1.S.1.6.1 Make and record observations. (544.01.a)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

Objective(s): By the end of Grade 1, the student will be able to:

1.S.1.7.1 Demonstrate cooperation and interaction skills. (553.01.a)

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Grade 1, the student will be able to:

1.S.1.8.1 Follow multi-step instructions. (553.02.a)

Standard 2: Physical Science

Students describe properties of common objects and how movement is a change of position.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

Objective(s): By the end of Grade 1, the student will be able to:

- 1.S.2.1.1 Describe properties of objects. (545.01.a)

Goal 2.2: Understand Concepts of Motion and Forces

Objective(s): By the end of Grade 1, the student will be able to:

- 1.S.2.2.1 Describe the position and motion of objects. (ex. revolve, rotate, at rest, float, and fall) (545.02.a)

Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

Goal 2.4: Understand the Structure of Atoms

No objectives at this grade level.

Goal 2.5: Understand Chemical Reactions

No objectives at this grade level.

Standard 3: Biology

Students describe the life cycles of living things and how they survive in their environment.

Goal 3.1: Understand the Theory of Biological Evolution

Objective(s): By the end of Grade 1, the student will be able to:

- 1.S.3.1.1 Describe the life cycle of a plant (seed, growth, reproduction, death). (547.01.a)
- 1.S.3.1.2 Describe the life cycle of an animal (birth, development, reproduction, death). (547.01.a)

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

Objective(s): By the end of Grade 1, the student will be able to:

- 1.S.3.2.1 State that living things need food to survive. (548.01.a)

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

Standard 4: Earth and Space Systems

Students describe characteristics for each season and the cycle of the seasons.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Grade 1, the student will be able to:

- 1.S.4.1.1 Identify the four seasons and their characteristics for a local region. [\(549.01.a\)](#)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

Standard 5: Personal and Social Perspectives; Technology

Students describe characteristics of the local environment.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Grade 1, the student will be able to:

- 1.S.5.1.1 Identify the characteristics of local natural environments. (playground, backyard). [\(551.01.a\)](#)

Goal 5.2: Understand the Relationship between Science and Technology

No objectives at this grade level.

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives at this grade level.

**IDAHO CONTENT STANDARDS
GRADE 2
SCIENCE**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students identify questions that can be answered through observation, collection, recording, and analysis of data. Students explain that the shape of an item is determined by its function. Students follow multi-step instructions, work cooperatively and use communication skills.

Goal 1.1: Understand Systems, Order, and Organization

No objectives at this grade level.

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

Objective(s): By the end of Grade 2, the student will be able to:

2.S.1.2.1 Make observations, record and interpret data. (558.01.a)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Grade 2, the student will be able to:

2.S.1.3.1 Measure in standard and non-standard units. (558.01.b)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

Objective(s): By the end of Grade 2, the student will be able to:

2.S.1.4.1 Apply the concepts of past, present, and future. (558.03.a)

Goal 1.5: Understand Concepts of Form and Function

Objective(s): By the end of Grade 2, the student will be able to:

2.S.1.5.1 Identify shape and use of objects. (558.04.a)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Grade 2, the student will be able to:

2.S.1.6.1 Identify questions to be investigated. (559.01.a)

2.S.1.6.2 Make observations. (559.01.b)

2.S.1.6.3 Analyze information and evidence. (559.01.d)

2.S.1.6.4 Communicate observations. (559.01.f)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

Objective(s): By the end of Grade 2, the student will be able to:

2.S.1.7.1 Practice cooperation and interaction skills. (568.01.a)

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Grade 2, the student will be able to:

2.S.1.8.1 Follow multi-step instructions. (568.02.a)

Standard 2: Physical Science

Students describe objects by their properties and explain the affect motion has on an object.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

Objective(s): By the end of Grade 2, the student will be able to:

2.S.2.1.1 List properties of an object. (560.01.a)

Goal 2.2: Understand Concepts of Motion and Forces

Objective(s): By the end of Grade 2, the student will be able to:

2.S.2.2.1 Explain how force affects the position and motion of objects. (560.01.a)

Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

Goal 2.4: Understand the Structure of Atoms

No objectives at this grade level.

Goal 2.5: Understand Chemical Reactions

No objectives at this grade level.

Standard 3: Biology

Students list the basic needs of animals.

Goal 3.1: Understand the Theory of Biological Evolution

No objectives at this grade level.

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

Objective(s): By the end of Grade 2, the student will be able to:

- 2.S.3.2.1 Identify four basic needs of all living things (food, shelter, water, space). [\(563.01.a\)](#)
- 2.S.3.2.2 Discuss how animals are suited to live in different habitats. [\(547.01.b\)](#)

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

Standard 4: Earth and Space Systems

Students describe weather conditions.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Grade 2, the student will be able to:

- 2.S.4.1.1 Describe the characteristics of different weather conditions. [\(564.01.b\)](#)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

Standard 5: Personal and Social Perspectives; Technology

Students compare man-made and natural environments. Students identify scientific tools.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Grade 2, the student will be able to:

- 2.S.5.1.1 Compare and contrast man-made and natural environments. [\(566.01.a\)](#)

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Grade 2, the student will be able to:

- 2.S.5.2.1 Identify tools people have invented for everyday life and for scientific investigations. [\(565.01.b\)](#)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives at this grade level.

**IDAHO CONTENT STANDARDS
GRADE 3
SCIENCE**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students apply scientific methods to conduct experiments. Students read and give multi-step instructions.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.1.1.1 Label the parts of a system. (573.01.a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.1.2.1 Make observations, collect data and evaluate it. (573.02.a)
- 3.S.1.2.2 Replicate and/or use models. (573.02.b)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.1.3.1 Measure changes that occur. (573.03.b)
- 3.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units. (573.03.c)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

Goal 1.5: Understand Concepts of Form and Function

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.1.5.1 Describe the relationship between shape and use. (573.05.a)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.1.6.1 Identify questions that can be answered by conducting scientific tests. (574.01.a)
- 3.S.1.6.2 Conduct scientific tests (574.01.b)
- 3.S.1.6.3 Use appropriate tools and techniques to gather and display data. (574.01.c)
- 3.S.1.6.4 Use data to construct a reasonable explanation. (574.01.d)
- 3.S.1.6.5 Make simple predictions based on data. (574.01.e)
- 3.S.1.6.6 Identify logical alternative explanations. (574.01.f)

3.S.1.6.7 Communicate the results of tests to others. [\(574.01.g\)](#)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Grade 3, the student will be able to:

3.S.1.8.1 Read and give multi-step instructions. [\(583.02.a\)](#)

Standard 2: Physical Science

Students use scientific instruments to describe the physical properties of the three states of matter.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

Objective(s): By the end of Grade 3, the student will be able to:

3.S.2.1.1 Use instruments to measure properties. [\(575.01.a\)](#)

3.S.2.1.2 Identify the physical properties of solids, liquids, and gases. [\(575.01.b\)](#)

3.S.2.1.3 Explain that heating and cooling can cause changes of state in common materials. [\(575.01.c\)](#)

Goal 2.2: Understand Concepts of Motion and Forces

No objectives at this grade level.

Goal 2.3: Understand the Total Energy in the Universe is Constant

3.S.2.3.1 Identify potential and kinetic energy. [\(590.03.a\)](#)

Goal 2.4: Understand the Structure of Atoms

No objectives at this grade level.

Goal 2.5: Understand Chemical Reactions

No objectives at this grade level.

Standard 3: Biology

Students explore the diversity of plants and animals in their environments. Students demonstrate an understanding of food webs.

Goal 3.1: Understand the Theory of Biological Evolution

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.3.1.1 Describe the adaptations of plants and animals to their environment. (577.01.a)

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.3.2.1 Describe the energy needed for living systems to survive. (578.01.a)
- 3.S.3.2.2 Compare and contrast the energy requirements of plants and animals. (593.01.a)
- 3.S.3.2.3 Label a food chain that shows how organisms cooperate and compete in an ecosystem. (578.01.b)
- 3.S.3.2.4 Diagram the food web and explain how organisms both cooperate and compete in ecosystems. (593.01.b)

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

Standard 4: Earth and Space Systems

Students explore the relationship between the sun and Earth.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.4.1.1 Explain the reasons for length of a day, the seasons, and the year on Earth. (594.01.a)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

Standard 5: Personal and Social Perspectives; Technology

Students identify local environmental issues. Students identify the relationship of tools to scientific investigation.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.5.1.1 Identify local environmental issues. (581.01.a)

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Grade 3, the student will be able to:

- 3.S.5.2.1 Describe how technology helps develop tools. (580.01.a)

3.S.5.2.2 Describe the development of tools over time. [\(580.01.b\)](#)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

Objective(s): By the end of Grade 3, the student will be able to:

3.S.5.3.1 Explain the concept of recycling. [\(581.03.a\)](#)

**IDAHO CONTENT STANDARDS
GRADE 4
SCIENCE**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students apply scientific methods to conduct experiments, analyze alternative explanations and communicate results of tests. Students analyze and follow multi-step instructions.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.1.1.1 Explain that a system consists of an organized group of related objects that form a whole. (588.01.a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanations

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.1.2.1 Make and record observations then analyze and communicate the collected data. (588.02.a)
- 4.S.1.2.2 Define observations and inferences. (588.02.b)
- 4.S.1.2.3 Make, describe and/or use models. (588.02.c)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.1.3.1 Describe how changes occur and can be measured. (588.03.b)
- 4.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units. (588.03.c)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

Goal 1.5: Understand Concepts of Form and Function

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.1.5.1 Explain the relationship between shape and use. (588.05.a)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.1.6.1 Write questions that can be answered by conducting scientific tests. (589.01.a)
- 4.S.1.6.2 Conduct scientific tests. (589.01.b)
- 4.S.1.6.3 Use appropriate tools and techniques to gather and display data. (589.01.c)

- 4.S.1.6.4 Use data to construct a reasonable explanation. (589.01.d)
- 4.S.1.6.5 Make predictions based on data. (589.01.e)
- 4.S.1.6.6 Analyze alternative explanations. (589.01.f)
- 4.S.1.6.7 Communicate the results of tests to others in multiple formats. (589.01.g)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.1.8.1 Analyze and follow multi-step instructions. (598.02.a)

Standard 2: Physical Science

Students use scientific instruments to describe and measure the properties of the three states of matter.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.2.1.1 Use instruments to measure properties (590.01.a)
- 4.S.2.1.2 Describe the physical properties of solids, liquids, and gases. (590.01.b)
- 4.S.2.1.3 Explain the changes caused by heating and cooling materials. (590.01.c)

Goal 2.2: Understand Concepts of Motion and Forces

No objectives at this grade level.

Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

Goal 2.4: Understand the Structure of Atoms

No objectives at this grade level.

Goal 2.5: Understand Chemical Reactions

No objectives at this grade level.

Standard 3: Biology

Students analyze how plants and animals adapt to their environments. Students classify vertebrates.

Goal 3.1: Understand the Theory of Biological Evolution

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.3.1.1 Analyze and communicate the adaptations of plants and animals to their environment. (592.01.a)
- 4.S.3.1.2 Describe the difference between vertebrate and invertebrate animals. (592.01.c)
- 4.S.3.1.3 Classify the five groups of vertebrates (mammal, reptiles, amphibians, birds, and fish) based on characteristics. (592.01.c)

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

No objectives at this grade level.

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

No objectives at this grade level.

Standard 4: Earth and Space Systems

Students investigate the basic contents of our solar system.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.4.1.1 Compare and contrast the basic components of our solar system (planets, sun, moon, asteroids, comets, meteors). (594.01.b)
- 4.S.4.1.2 Explain the effect of gravity on orbits and objects. (594.01.c)
- 4.S.4.1.3 Explain the effect of moon's gravity on Earth's tides. (594.01.c)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

Standard 5: Personal and Social Perspectives; Technology

Students explain how people have invented tools to meet a need or do a job.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

No objectives at this grade level.

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Grade 4, the student will be able to:

- 4.S.5.2.1 Identify tools used for space exploration and for scientific investigations. (595.01.b)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives at this grade level.

**IDAHO CONTENT STANDARDS
GRADE 5
SCIENCE**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students identify the components of a system and explain their relationship to the whole.
Students read, execute, and give technical instructions.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.1.1.1 Compare and contrast different systems. (603.01.a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.1.2.1 Use observations and data as evidence on which to base scientific explanations and predictions. (603.02a)
- 5.S.1.2.2 Explain the difference between observation and inference. (603.02.b)
- 5.S.1.2.3 Use models to explain or demonstrate a concept. (603.02.c)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.1.3.1 Analyze changes that occur in and among systems. (603.03.b)
- 5.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system. (603.03.c)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

Goal 1.5: Understand Concepts of Form and Function

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.1.5.1 Explain how the shape or form of an object or system is frequently related to its use or function. (603.05.a)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. (604.01.a)
- 5.S.1.6.2 Conduct scientific investigations using a control and a variable. (604.01.b)

- 5.S.1.6.3 Select and use appropriate tools and techniques to gather and display data. [\(604.01.c\)](#)
- 5.S.1.6.4 Use evidence to analyze descriptions, explanations, predictions, and models. [\(604.01.d\)](#)
- 5.S.1.6.5 State a hypothesis based on observations. [\(604.01.e\)](#)
- 5.S.1.6.6 Compare alternative explanations and predictions. [\(604.01.f\)](#)
- 5.S.1.6.7 Communicate scientific procedures and explanations. [\(604.01.g\)](#)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.1.8.1 Read and follow technical instructions. [\(613.02.a\)](#)

Standard 2: Physical Science

Students explain the difference between an element, a mixture, and a compound.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.2.1.1 Describe the differences among elements, compounds, and mixtures. [\(605.01.a\)](#)
- 5.S.2.1.2 Compare the physical differences among solids, liquids, and gases. [\(605.01.c\)](#)
- 5.S.2.1.3 Explain the nature of physical change and how it relates to physical properties. [\(605.01.d\)](#)

Goal 2.2: Understand Concepts of Motion and Forces

No objectives at this grade level.

Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

Goal 2.4: Understand the Structure of Atoms

No objectives at this grade level.

Goal 2.5: Understand Chemical Reactions

No objectives at this grade level.

Standard 3: Biology

Students explain the differences between plant and animal cells. Students understand that plants convert energy. Students know that traits are passed from parents to offspring.

Goal 3.1: Understand the Theory of Biological Evolution

No objectives at this grade level.

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.3.2.1 Communicate how plants convert energy from the sun through photosynthesis. (608.01.a)

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.3.3.1 Compare and contrast the structural differences between plant and animal cells. (606.01.b)
- 5.S.3.3.2 Explain the concept that traits are passed from parents to offspring. (606.01.c)

Standard 4: Earth and Space Systems

Students describe the dynamic changes that occur on Earth.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.4.1.1 Describe the interactions among the solid earth, oceans and atmosphere (erosion, climate, tectonics and continental drift). (609.01.a)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.4.2.1 Explain the rock cycle and identify the three classifications of rocks. (609.02.a)

Standard 5: Personal and Social Perspectives; Technology

Students use the scientific method to identify environmental issues.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.5.1.1 Identify issues for environmental studies. (611.01.a)

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.5.2.1 Describe how science and technology are part of a student's life. [\(610.01.a\)](#)
- 5.S.5.2.2 List examples of science and technology. [\(610.01.b\)](#)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

Objective(s): By the end of Grade 5, the student will be able to:

- 5.S.5.3.1 Identify the differences between renewable and nonrenewable resources.
[\(611.03.a\)](#)

**IDAHO CONTENT STANDARDS
GRADE 6
SCIENCE**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students gather evidence to differentiate between predictions, observations, and inferences.
Students read, give, and execute technical instructions.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.1.1.1 Analyze different systems. [\(618.01.a\)](#)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.1.2.1 Explain how observations and data are used as evidence on which to base scientific explanations and predictions. [\(618.02.a\)](#)
- 6.S.1.2.2 Use observations to make inferences. [\(618.02.b\)](#)
- 6.S.1.2.3 Use models to explain or demonstrate a concept. [\(618.02.c\)](#)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.1.3.1 Analyze changes that occur in and among systems. [\(618.03.b\)](#)
- 6.S.1.3.2 Measure in both U.S. Customary and International System of Measurement (metric system) units with an emphasis on the metric system. [\(618.03.c\)](#)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives at this grade level.

Goal 1.5: Understand Concepts of Form and Function

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.1.5.1 Analyze how the shape or form of an object or system is frequently related to its use and/or function. [\(618.05.a\)](#)

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.1.6.1 Write and analyze questions that can be answered by conducting scientific experiments. [\(619.02.a\)](#)

- 6.S.1.6.2 Conduct scientific investigations using a control and variables. Repeat same experiment using alternate variables. (619.02.b)
- 6.S.1.6.3 Select and use appropriate tools and techniques to gather and display data. (619.02.c)
- 6.S.1.6.4 Use evidence to analyze data in order to develop descriptions, explanations, predictions, and models. (619.2.d)
- 6.S.1.6.5 Test a hypothesis based on observations. (619.02.e)
- 6.S.1.6.6 Communicate scientific procedures and explanations. (619.02.g)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.1.8.1 Read, give, and execute technical instructions. (628.01a)

Standard 2: Physical Science

Students compare and contrast elements, compounds and mixtures. Students explore the effects of force and energy on objects.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.2.1.1 Compare and contrast the differences among elements, compounds and mixtures. (620.01.a)
- 6.S.2.1.2 Define the properties of matter. (620.01.b)
- 6.S.2.1.3 Compare densities of equal volumes of a solid, a liquid, or a gas. (619.01.c)
- 6.S.2.1.4 Describe the effect of temperature on density. (620.01.c)
- 6.S.2.1.5 Explain the nature of physical change and how it relates to physical properties (the distance between molecules as water changes from ice to liquid water, and to water vapor). (620.01.d)

Goal 2.2: Understand Concepts of Motion and Forces

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.2.2.1 Describe the effects of different forces (gravity and friction) on the movement, speed, and direction of an object. (620.03.d)

Goal 2.3: Understand the Total Energy in the Universe is Constant

No objectives at this grade level.

Goal 2.4: Understand the Structure of Atoms

No objectives at this grade level.

Goal 2.5: Understand Chemical Reactions

No objectives at this grade level.

Standard 3: Biology

Students understand the building blocks of organisms.

Goal 3.1: Understand the Theory of Biological Evolution

No objectives at this grade level.

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

No objectives at this grade level.

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.3.3.1 Identify the different structural levels of which an organism is comprised (cells, tissues, organs, organ systems, and organisms). [\(621.01.a\)](#)
- 6.S.3.3.2 Analyze the structural differences between plant and animal cells. [\(621.01.b\)](#)
- 6.S.3.3.3 Describe how traits are passed from parents to offspring. [\(621.01.c\)](#)

Standard 4: Earth and Space Systems

Students understand and explain the relationship among the systems on Earth, such as solid earth, oceans, atmosphere, and organisms.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.4.1.1 Explain the interactions among the solid earth, oceans, atmosphere, and organisms. [\(624.01.a\)](#)
- 6.S.4.1.2 Explain the water cycle and its relationship to weather and climate. [\(624.01.b\)](#)
- 6.S.4.1.3 Identify cumulus, cirrus, and stratus clouds and how they relate to weather changes. [\(624.01.c\)](#)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

No objectives at this grade level.

Standard 5: Personal and Social Perspectives; Technology

Students identify issues for environmental studies and understand the difference between renewable and nonrenewable resources.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.5.1.1 Identify issues for environmental studies. [\(626.01.a\)](#)

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.5.2.1 Describe how science and technology are part of our society. [\(625.01.a\)](#)
- 6.S.5.2.2 Describe how science and technology are interrelated. [\(625.01.b\)](#)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

Objective(s): By the end of Grade 6, the student will be able to:

- 6.S.5.3.1 Explain the difference between renewable and nonrenewable resources. [\(626.03.a\)](#)

**IDAHO CONTENT STANDARDS
GRADE 7
SCIENCE**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students carry out investigations over time using appropriate tools and equipment. Students make inferences based upon data they collect. Students accurately communicate the results of their investigations and observations. Students support or revise their conclusions by critically analyzing alternate explanations. Students carry out investigations following written lab procedures. Students follow safety protocols in carrying out investigations.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Grade 7 the student will be able to:

- 7.S.1.1.1 Define small systems as a part of a whole system. (633.01.a)
- 7.S.1.1.2 Determine how small systems contribute to the function of the whole. (633.01.a)
- 7.S.1.1.3 Identify the different structural levels of an organism (cells, tissues, organs, and organ systems). (633.01.b)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.1.2.1 Describe how observations and data are evidence on which to base scientific explanations and predictions. (633.02.a)
- 7.S.1.2.2 Use observations to make defensible inferences. (633.02.b)
- 7.S.1.2.3 Use models to explain or demonstrate a concept. (633.02.c)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.1.3.1 Identify concepts of science that have been stable over time. (633.03.a)
- 7.S.1.3.2 Recognize changes that occur within systems. (633.03.b)
- 7.S.1.3.3 Make metric measurements using appropriate tools. (633.03.c)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

Reference to objective 7.S.3.2.1

Goal 1.5: Understand Concepts of Form and Function

No objectives at this grade level.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.1.6.1 Identify controls and variables used in scientific investigations. (634.01.b)
- 7.S.1.6.2 Use appropriate tools and techniques to gather and display data. (634.01c)
- 7.S.1.6.3 Evaluate data in order to form conclusions. (634.01.d)
- 7.S.1.6.4 Use evidence and critical thinking to accept or reject a hypothesis. (634.01.e)
- 7.S.1.6.5 Evaluate alternative explanations or predictions. (634.01.f)
- 7.S.1.6.6 Communicate and defend scientific procedures and explanations. (634.01.g)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives at this grade level.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.1.8.1 Read and evaluate technical instructions. (643.02.a)

Standard 2: Physical Science

No goals or objectives at this grade level.

Standard 3: Biology

Students state the levels of cellular organization and list cell parts and their respective functions. Students explain how traits are passed from one generation to another. Students differentiate between plant and animals cells by identifying the characteristic parts of each. Students explain how organisms are adapted to their environment and interact with the biotic and abiotic components of the environment.

Goal 3.1: Understand the Theory of Biological Evolution

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.3.1.1 Describe how natural selection explains species change over time. (637.01.a)

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.3.2.1 Describe how energy stored in food is primarily derived from the sun through photosynthesis. (638.01.a)
- 7.S.3.2.2 Describe how the availability of resources (matter and energy) limits the distribution and abundance of organisms. (638.01.b)
- 7.S.3.2.3 Illustrate how atoms and molecules cycle among the living and nonliving components of the biosphere. (638.01.c)
- 7.S.3.2.4 Identify how energy flows through ecosystems in one direction, from photosynthetic organisms to herbivores, carnivore, and decomposers. (638.01.d)

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.3.3.1 Explain the relationships among specialized cells, tissues, organs, organ systems, and organisms. [\(636.01.a\)](#)
- 7.S.3.3.2 Identify the parts of specialized plant and animal cells. [\(636.01.b\)](#)
- 7.S.3.3.3 Identify the functions of cell structures. [\(636.01.b\)](#)
- 7.S.3.3.4 Describe cell functions that involve chemical reactions. [\(630.01.c\)](#)
- 7.S.3.3.5 Describe how dominant and recessive traits are inherited. [\(636.01.e\)](#)

Standard 4: Earth and Space Systems

No goals or objectives at this grade level.

Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both individuals and society.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

No objectives at this grade level.

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.5.2.1 Explain how science and technology are interrelated. [\(640.01.a\)](#)
- 7.S.5.2.2 Explain how science advances technology. [\(640.01.b\)](#)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

Objective(s): By the end of Grade 7, the student will be able to:

- 7.S.5.3.1 Identify alternative sources of energy. [\(641.03.a\)](#)

**IDAHO CONTENT STANDARDS
GRADE 8-9
PHYSICAL SCIENCE**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)
- 8-9.PS.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)
- 8-9.PS.1.2.2 Develop models to explain concepts or systems. (648.02b)
- 8-9.PS.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.1.3.1 Measure changes that can occur in and among systems. (648.03b)
- 8-9.PS.1.3.2 Analyze changes that can occur in and among systems. (648.03b)
- 8-9.PS.1.3.3 Measure and calculate using the metric system. (648.03c)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives in Physical Science.

Goal 1.5: Understand Concepts of Form and Function

No objectives in Physical Science.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)
- 8-9.PS.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)
- 8-9.PS.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)
- 8-9.PS.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)
- 8-9.PS.1.6.5 Analyze alternative explanations and models. (649.01e)
- 8-9.PS.1.6.6 Communicate and defend a scientific argument. (649.01f)
- 8-9.PS.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives in Physical Science.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

Standard 2: Physical Science

Students explain the structure and properties of atoms, including isotopes. Students explain how chemical reactions, while requiring or releasing energy, can neither destroy nor create energy or matter. Students explain the differences between fission and fusion. Students explain the interactions of force and mass in describing motion using Newton's Laws. Students explain how energy can be transformed from one form to another while the total amount of energy remains constant. Students classify energy as potential and/or kinetic, and as energy contained in a field.

Goal 2.1: Understand the Structure and Function of Matter and Molecules and Their Interactions

No objectives in Physical Science.

Goal 2.2: Understand Concepts of Motion and Forces

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.2.2.1 Explain motion using Newton's Laws of Motion. (650.04b)

Goal 2.3: Understand the Total Energy in the Universe is Constant

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.2.3.1 Explain that energy can be transformed but cannot be created nor destroyed. (650.05a)
- 8-9.PS.2.3.2 Classify energy as potential and/or kinetic and as energy contained in a field. (650.05b)

Goal 2.4: Understand the Structure of Atoms

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.2.4.1 Describe the properties, function, and location of protons, neutrons, and electrons. (650.01a)
- 8-9.PS.2.4.2 Explain the processes of fission and fusion. (650.01b)
- 8-9.PS.2.4.3 Describe the characteristics of isotopes. (650.01c)
- 8-9.PS.2.4.4 State the basic electrical properties of matter. (650.01d)
- 8-9.PS.2.4.5 Describe the relationships between magnetism and electricity.

Goal 2.5: Understand Chemical Reactions

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.2.5.1 Explain how chemical reactions may release or consume energy while the quantity of matter remains constant. (650.03a)

Standard 3: Biology

No goals or objectives in Physical Science.

Standard 4: Earth and Space Systems

No goals or objectives in Physical Science.

Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both society and the environment.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

No objectives in Physical Science.

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Physical Science, the student will be able to:

- 8-9.PS.5.2.1 Explain how science advances technology. (655.01a)
- 8-9.PS.5.2.2 Explain how technology advances science. (655.01a)

8-9.PS.5.2.3 Explain how science and technology are pursued for different purposes.
(656.01b)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

No objectives in Physical Science.

**IDAHO CONTENT STANDARDS
GRADE 8-9
EARTH SCIENCE**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)
- 8-9.ES.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)
- 8-9.ES.1.2.2 Develop models to explain concepts or systems. (648.02b)
- 8-9.ES.1.2.3 Develop scientific explanations based on knowledge, logic, and analysis. (648.02c)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.1.3.1 Measure changes that can occur in and among systems. (648.03b)
- 8-9.ES.1.3.2 Analyze changes that can occur in and among systems. (648.03b)
- 8-9.ES.1.3.3 Measure and calculate using the metric system. (648.03c)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

No objectives in Earth Science.

Goal 1.5: Understand Concepts of Form and Function

No objectives in Earth Science.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Earth Science, the student will:

- 8-9.ES.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)
- 8-9.ES.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)
- 8-9.ES.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)
- 8-9.ES.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)
- 8-9.ES.1.6.5 Analyze alternative explanations and models. (649.01e)
- 8-9.ES.1.6.6 Communicate and defend a scientific argument. (649.01f)
- 8-9.ES.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives in Earth Science.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

Standard 2: Physical Science

No goals or objectives in Earth Science.

Standard 3: Biology

No goals or objectives in Earth Science.

Standard 4: Earth and Space Systems

Students describe the current theory explaining the formation of the solar system. Students explain earth processes, events (erosion, uplifting, earthquakes, volcanic eruptions, etc.), and geological time. Students explain Earth's heat sources.

Goal 4.1: Understand Scientific Theories of Origin and Subsequent Changes in the Universe and Earth Systems

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.4.1.1 Explain the current scientific theory that suggests that the solar system formed from a nebular cloud of dust and gas. (654.01a)
- 8-9.ES.4.1.2 Identify methods used to estimate geologic time. (654.01b)
- 8-9.ES.4.1.3 Show how interactions among the solid earth, oceans, atmosphere, and organisms have changed the earth system over time. (654.01c)

Goal 4.2: Understand Geo-chemical Cycles and Energy in the Earth System

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.4.2.1 Explain the internal and external energy sources of the earth (654.02a)

Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both society and the environment. Students describe issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.5.1.1 Analyze environmental issues such as water and air quality, hazardous waste, and depletion of natural resources. (656.01a)

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.5.2.1 Explain how science advances technology. (655.01a)
- 8-9.ES.5.2.2 Explain how technology advances science. (655.01a)
- 8-9.ES.5.2.3 Explain how science and technology are pursued for different purposes. (655.01b)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

Objective(s): By the end of Earth Science, the student will be able to:

- 8-9.ES.5.3.1 Describe the difference between renewable and nonrenewable resources. (656.03a)

**IDAHO CONTENT STANDARDS
GRADE 9-10
BIOLOGY**

Students are expected to know content and apply skills from previous grades.

Standard 1: Nature of Science

Students exercise the basic tenets of scientific investigation, make accurate observations, exercise critical thinking skills, apply proper scientific instruments of investigation and measurement tools, and communicate results in problem solving. Students evaluate the validity of information by utilizing the tools of scientific thinking and investigation. Students summarize their findings by creating lab reports using technical writing including graphs, charts, and diagrams to communicate the results of investigations.

Goal 1.1: Understand Systems, Order, and Organization

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.1.1.1 Explain the scientific meaning of system, order, and organization. (648.01a)
- 9-10.B.1.1.2 Apply the concepts of order and organization to a given system. (648.01a)

Goal 1.2: Understand Concepts and Processes of Evidence, Models, and Explanation

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.1.2.1 Use observations and data as evidence on which to base scientific explanations. (648.02a)
- 9-10.B.1.2.2 Develop models to explain concepts or systems. (648.02b)
- 9-10.B.1.2.3 Develop scientific explanations based on knowledge, logic and analysis. (648.02c)

Goal 1.3: Understand Constancy, Change, and Measurement

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.1.3.1 Measure changes that can occur in and among systems. (648.03b)
- 9-10.B.1.3.2 Analyze changes that can occur in and among systems. (648.03b)
- 9-10.B.1.3.3 Measure and calculate using the metric system. (648.03c)

Goal 1.4: Understand the Theory that Evolution is a Process that Relates to the Gradual Changes in the Universe and of Equilibrium as a Physical State

Reference to 7.S.3.2.1

Goal 1.5: Understand Concepts of Form and Function

No objectives in Biology.

Goal 1.6: Understand Scientific Inquiry and Develop Critical Thinking Skills

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.1.6.1 Identify questions and concepts that guide scientific investigations. (649.01a)
- 9-10.B.1.6.2 Utilize the components of scientific problem solving to design, conduct, and communicate results of investigations. (649.01b)
- 9-10.B.1.6.3 Use appropriate technology and mathematics to make investigations. (649.01c)
- 9-10.B.1.6.4 Formulate scientific explanations and models using logic and evidence. (649.01d)
- 9-10.B.1.6.5 Analyze alternative explanations and models. (649.01e)
- 9-10.B.1.6.6 Communicate and defend a scientific argument. (649.01f)
- 9-10.B.1.6.7 Explain the differences among observations, hypotheses, and theories. (649.01g)

Goal 1.7: Understand That Interpersonal Relationships Are Important in Scientific Endeavors

No objectives in Biology.

Goal 1.8: Understand Technical Communication

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.1.8.1 Analyze technical writing, graphs, charts, and diagrams. (658.02a)

Standard 2: Physical Science

No goals or objectives in Biology.

Standard 3: Biology

Students explain the importance of cells as they relate to the organization and structure of complex organisms, differentiation and specialization during development, and the chemical reactions necessary to sustain life. Students describe the functions of cell structures. Students use the theory of evolution to explain diversity of life.

Goal 3.1: Understand the Theory of Biological Evolution

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.3.1.1 Use the theory of evolution to explain how species change over time. (652.01a)
- 9-10.B.3.1.2 Explain how evolution is the consequence of interactions among the potential of a species to increase its numbers, genetic variability, a finite supply of resources, and the selection by the environment of those offspring better able to survive and reproduce. (652.01a)

Goal 3.2: Understand the Relationship between Matter and Energy in Living Systems

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.3.2.1 Explain how matter tends toward more disorganized states (entropy). (653.01a)
- 9-10.B.3.2.2 Explain how organisms use the continuous input of energy and matter to maintain their chemical and physical organization. (653.01b)
- 9-10.B.3.2.3 Show how the energy for life is primarily derived from the sun through photosynthesis. (653.01c)
- 9-10.B.3.2.4 Describe cellular respiration and the synthesis of macromolecules. (653.01d)
- 9-10.B.3.2.5 Show how matter cycles and energy flows through the different levels of organization of living systems (cells, organs, organisms, communities) and their environment. (653.01h)

Goal 3.3: Understand the Cell is the Basis of Form and Function for All Living Things

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.3.3.1 Identify the particular structures that underlie the cellular functions. (651.01a)
- 9-10.B.3.3.2 Explain cell functions involving chemical reactions. (651.01b)
- 9-10.B.3.3.3 Explain how cells use DNA to store and use information for cell functions. (651.01c)
- 9-10.B.3.3.4 Explain how selective expression of genes can produce specialized cells from a single cell. (651.01e)

Standard 4: Earth and Space Systems

No goals or objectives in Biology.

Standard 5: Personal and Social Perspectives; Technology

Students understand that science and technology interact and impact both society and the environment. Students describe issues such as water and air quality, hazardous waste, renewable and nonrenewable resources.

Goal 5.1: Understand Common Environmental Quality Issues, Both Natural and Human Induced

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.5.1.1 Analyze environmental issues such as water and air quality, hazardous waste, forest health, and agricultural production. (656.01a)

Goal 5.2: Understand the Relationship between Science and Technology

Objective(s): By the end of Biology, the student will be able to:

- 9-10.B.5.2.1 Explain how science advances technology. (655.01a)
- 9-10.B.5.2.2 Explain how technology advances science. (655.01a)

9-10.B.5.2.3 Explain how science and technology are pursued for different purposes.
(656.01b)

Goal 5.3: Understand the Importance of Natural Resources and the Need to Manage and Conserve Them

Objective(s): By the end of Biology, the student will be able to:

9-10.B.5.3.1 Describe the difference between renewable and nonrenewable resources.
(656.03a)